

## CS140 (Lap) 2021

### Q1) Write a java program that:

1) Create a class **Tv**. A tv is characterized by three information: **(1 Mark)**

A **color** (for example: "black")

A **width** (for example: 49)

A **price** (for example: 2650.5)

2) Create for the class **Tv**:

a. A first constructor that initialize all the tv information by default as the following: **(1 Mark)**

- **color** = ""

- **width** = 0

- **price** = 0

b. A second constructor that initialize all the tv information to a given values. **(1 Mark)**

c. A method **printAll** that print all the tv information. **(1 Mark)**

d. Two method **setPrice** and **getPrice** to change and get the price. **(1 Mark)**

3) Create a class **TvTester** with a main method. **(1 Mark)**

4) In the main method:

a. Create the object **tv1** using the first constructor. Print all the information of **tv1** using the method **printAll**. **(1 Mark)**

b. Create the object **tv2** using the second constructor and ask the user to enter the necessary information (color, width, price). Print all the information of **tv2** using the method **printAll**. **(2 Mark)**

c. Change the **tv2** price to 1504.8 then print all its information. **(1 Mark)**

### Typical run of the program:

```
***** tv1 information *****
color = 
width = 0
price = 0.0
Please give the tv2 color
Black
Please give the tv2 width
49
Please give the tv2 price
1560.5
***** tv2 old information *****
color = Black
width = 49
price = 1560.5
***** tv2 new information *****
color = Black
width = 49
price = 1504.8
```

## Tv Class

```
public class Tv {
    String color;
    int width;
    double price;
    public Tv () {
        color="";
        width=0;
        price=0;
    }
    public Tv (String color, int width, double price){
        this.color= color;
        this.width= width;
        this.price= price;
    }
    public void setPrice(double price)
    { this.price = price;}
    public double getPrice()
    { return price;}
    public void printAll()
    {
        System.out.println("color= "+color);
        System.out.println("width= "+width);
        System.out.println("price= "+price);
    }
}
```

```
5      public class Tv {
6          String color;
7          int width;
8          double price;
9      public Tv () {
10         color="";
11         width=0;
12         price=0;
13     }
14     public Tv (String color,int width,double price){
15         this.color= color;
16         this.width= width;
17         this.price= price;
18     }
19     public void setPrice(double price)
20     { this.price = price;}
21     public double getPrice()
22     { return price;}
23     public void printAll()
24     {
25         System.out.println("color= "+color);
26         System.out.println("width= "+width);
27         System.out.println("price= "+price);
28     }
29 }
```

### TvTester Main Class

```
import java.util.Scanner;
public class TvTester {
    public static void main(String[] args) {
        Scanner in = new Scanner(System.in);
        System.out.println("***** tv1 information *****");
        Tv tv1 = new Tv();
        tv1.printAll();
        System.out.println("Please give the tv2 color");
        String userColor=in.nextLine() ;
        System.out.println("Please give the tv2 width");
        int userWidth= in.nextInt();
        System.out.println("Please give the tv2 price");
        double userPrice= in.nextDouble();
        Tv tv2 = new Tv(userColor, userWidth, userPrice);
        System.out.println("***** tv2 information *****");
        tv2.printAll();
        tv2.setPrice(1504.8);
        System.out.println("***** tv2 new information *****");
        tv2.printAll();
    }
}
```

```
4  import java.util.Scanner;
5
6  public class TvTester {
7
8      public static void main(String[] args) {
9          Scanner in = new Scanner(System.in);
10         System.out.println("***** tv1 information *****");
11         Tv tv1 = new Tv();
12         tv1.printAll();
13
14         System.out.println("Please give the tv2 color");
15         String userColor=in.nextLine() ;
16         System.out.println("Please give the tv2 width");
17         int userWidth= in.nextInt();
18         System.out.println("Please give the tv2 price");
19         double userPrice= in.nextDouble();
20         Tv tv2 = new Tv(userColor,userWidth,userPrice);
21         System.out.println("***** tv2 information *****");
22         tv2.printAll();
23         tv2.setPrice(1504.8);
24         System.out.println("***** tv2 new information *****");
25         tv2.printAll();
26     }
27 }
```

## Output

run:

\*\*\*\*\* tv1 information \*\*\*\*\*

color=

width= 0

price= 0.0

Please give the tv2 color

Black

Please give the tv2 width

49

Please give the tv2 price

1560.5

\*\*\*\*\* tv2 information \*\*\*\*\*

color= Black

width= 49

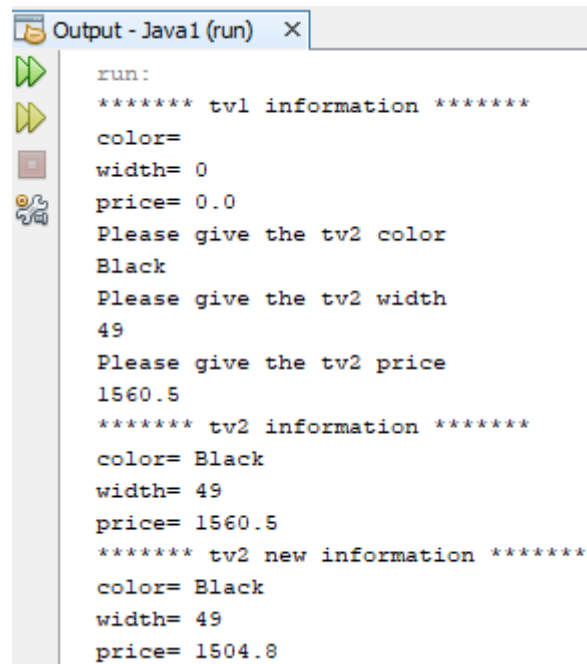
price= 1560.5

\*\*\*\*\* tv2 new information \*\*\*\*\*

color= Black

width= 49

price= 1504.8



```
run:
***** tv1 information *****
color=
width= 0
price= 0.0
Please give the tv2 color
Black
Please give the tv2 width
49
Please give the tv2 price
1560.5
***** tv2 information *****
color= Black
width= 49
price= 1560.5
***** tv2 new information *****
color= Black
width= 49
price= 1504.8
```

**Q2) Write a java program that:**

**1) Create a class *Radio*. A radio is characterizes by three information: (1 Mark)**

A **frequency** (for example: 90.5)  
A **channel** name (for example: "first radio")  
A number of **followers** (for example: 106)

**2) Create for the class *Radio*:**

**a. A first constructor that initialize all the radio information by default as the following: (1 Mark)**

- **frequency** = 0
- **channel** = ""
- **followers** = 0

**b. A second constructor that initialize all the radio information to a given values. (1 Mark)**

**c. A method *printAll* that print all the radio information. (1 Mark)**

**d. Two method *setFrequency* and *getFrequency* to change and get the Frequency. (1 Mark)**

**3) Create a class *RadioTester* with a main method. (1 Mark)**

**4) In the main method:**

**a. Create the object *Radio1* using the first constructor. Print all the information of *Radio1* using the method *printAll*. (1 Mark)**

**b. Create the object *Radio2* using the second constructor and ask the user to enter the necessary information (frequency, channel, followers). Print all the information of *Radio2* using the method *printAll*. (2 Mark)**

**c. Change the *Radio2* frequency to 100.5 then print all its information. (1 Mark)**

**Typical run of the program:**

```
Options
Characteristics of radio1
frequency = 0.0
channel = 
followers = 0
please give radio2 requency
90.2
please give the radio channel
fm
please give the radio number of followers
6209
Old Characteristics of radio2
frequency = 90.2
channel = fm
followers = 6209
new Characteristics of radio2
frequency = 100.5
channel = fm
followers = 6209
```

```

Radio
package javaapplication95;

public class Radio {
    private double frequency;
    private String channelName;
    private int numberOfFollowers;

    Radio()
    {
        this.frequency=0;
        this.channelName="";
        this.numberOfFollowers=0;
    }

    Radio(double fr,String cn,int nf)
    {
        this.frequency=fr;
        this.channelName=cn;
        this.numberOfFollowers=nf;
    }

    public void printAll()
    {
        System.out.println("Frequency= " + this.frequency);
        System.out.println("Channel= " + this.channelName);
        System.out.println("Followers= " + this.numberOfFollowers);
    }

    public void setFrequency(double fr)
    {
        this.frequency=fr;
    }

    public double getFrequency()
    {
        return this.frequency;
    }
}

```

```

RadioTeater
import java.util.Scanner;

public class RadioTester {

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        Radio radio1 = new Radio();
        System.out.println("Characteristics of Radio 1");
        radio1.printAll();

        System.out.println("please give radio2 frequency");
        double fr = sc.nextDouble();
        System.out.println("please give the radio channel");
        String cn = sc.next();
        System.out.println("please give the radio number of
followers");
        int nf = sc.nextInt();
        Radio radio2 = new Radio(fr, cn, nf);

        System.out.println("Old characteristics of Radio 2");
        radio2.printAll();

        radio2.setFrequency(100.5);
        System.out.println("new characteristics of Radio 2");
        radio2.printAll();

    }
}

```

```

run:
Characteristics of Radio 1
Frequency= 0.0
Channel=
Followers= 0
please give radio2 frequency
90.2
please give the radio channel
fm
please give the radio number of followers
6209
Old characteristics of Radio 2
Frequency= 90.2
Channel= fm
Followers= 6209
new characteristics of Radio 2
Frequency= 100.5
Channel= fm
Followers= 6209
BUILD SUCCESSFUL (total time: 13 seconds)

```